

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

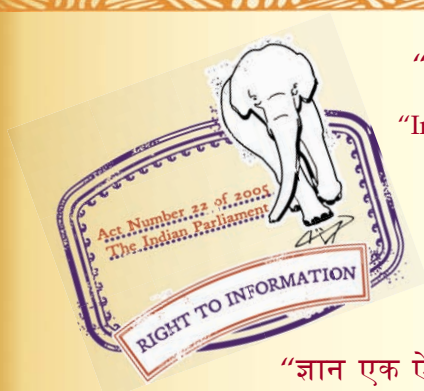
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

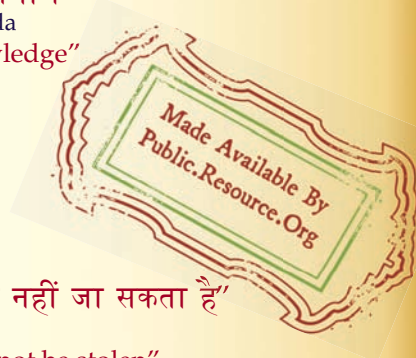
IS 10714-30 (2006): Technical drawings - General principles of presentation, Part 30: Basic conventions for views [PGD 24: Drawings]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

तकनीकी ड्राइंग — प्रस्तुतीकरण के सामान्य सिद्धान्त

भाग 30 दृश्यों के लिए आधारभूत मान्यताएँ

Indian Standard

**TECHNICAL DRAWINGS — GENERAL PRINCIPLES
OF PRESENTATION**

PART 30 BASIC CONVENTIONS FOR VIEWS

ICS 01.100.01

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

NATIONAL FOREWORD

This Indian Standard (Part 30) which is identical with ISO 128-30 : 2001 'Technical drawings — General principles of presentation — Part 30 : Basic conventions for views' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Drawings Sectional Committee and approval of the Production and General Engineering Division Council.

ISO 128 was published in 1982 and was accordingly adopted as IS 10714 : 1983. ISO 128 : 1982 was withdrawn and published again in several parts. In view of this Drawings Sectional Committee decided to adopt ISO 128-30 : 2001 as IS 10714 (Part 30).

This standard specifies general principles for presenting views, applicable to all kinds of technical drawings (mechanical, electrical, architectural, civil engineering, etc), following the orthographic projection methods specified in ISO 5456-2. The requirements of reproduction, including microcopying in accordance with ISO 6428 has also been taken care of in this standard.

It is applicable for all kinds of technical drawings, including, for example, those used in mechanical engineering and construction. It is applicable to both manual and computer-based drawings. It is not applicable to three-dimensional CAD models.

The other parts of this series are given as follows:

IS 10714 (Part 20) : 2001 Technical drawings — General principles of presentation: Part 20
Basic conventions for lines

IS 10714 (Part 21) : 2001 Technical drawings — General principles of presentation: Part 21
Preparation of lines by CAD systems

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words, 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their places are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 3098-0 : 1997 Technical product documentation — Lettering — Part 0 : General requirements	IS 9609 (Part 0) : 2001 Technical product documentation — Lettering: Part 0 General requirements	Identical
ISO 5456-2 : 1996 Technical drawings — Projection methods — Part 2 : Orthographic representations	IS 15021 (Part 2) : 2001 Technical Drawings — Projection methods: Part 2 Orthographic representations	do
ISO 6428 : 1982 Technical drawings — Requirements for micro-copying	IS 10164 : 1985 Requirements to execute technical drawings for micro-copying (<i>first revision</i>)	do

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Indian Standard

TECHNICAL DRAWINGS — GENERAL PRINCIPLES OF PRESENTATION

PART 30 BASIC CONVENTIONS FOR VIEWS

1 Scope

This part of ISO 128 specifies the general principles for presenting views, applicable to all kinds of technical drawings (mechanical, electrical, architectural, civil engineering, etc.), following the orthographic projection methods specified in ISO 5456-2.

Attention has also been given in this part of ISO 128 to the requirements of reproduction, including microcopying in accordance with ISO 6428.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 128. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 128 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 128-24:1999, *Technical drawings — General principles of presentation — Part 24: Lines on mechanical engineering drawings*.

ISO 3098-0, *Technical product documentation — Lettering — Part 0: General requirements*.

ISO 5456-2, *Technical drawings — Projection methods — Part 2: Orthographic representations*.

ISO 6428, *Technical drawings — Requirements for microcopying*.

ISO 10209-1, *Technical product documentation — Vocabulary — Part 1: Terms relating to technical drawings: general and types of drawings*.

ISO 10209-2, *Technical product documentation — Vocabulary — Part 2: Terms relating to projection methods*.

ISO 81714-1, *Design of graphical symbols for use in the technical documentation of products — Part 1: Basic rules*.

3 Terms and definitions

For the purposes of this part of ISO 128, the terms and definitions given in ISO 10209-1 and ISO 10209-2 apply.

4 General

The most informative view of an object shall be used as the front or principal figure, taking into consideration, for example, its functioning position, position of manufacturing or mounting.

Each view, with the exception of the front or principal figure (view, plan, principal figure), shall be given clear identification with a capital letter, repeated near the reference arrow needed to indicate the direction of viewing for the

relevant view. Whatever the direction of viewing, the capital letter shall always be positioned in normal relation to the direction of reading, and be indicated either above or on the right side of the reference arrow.

The reference arrow is defined in annex C (including the arc arrow, see clause 7), as is the lettering height of the identification.

The designated views may be located irrespective of the principal figure. The capital letters identifying the referenced views shall be placed immediately above the relevant views (see Figure 1).

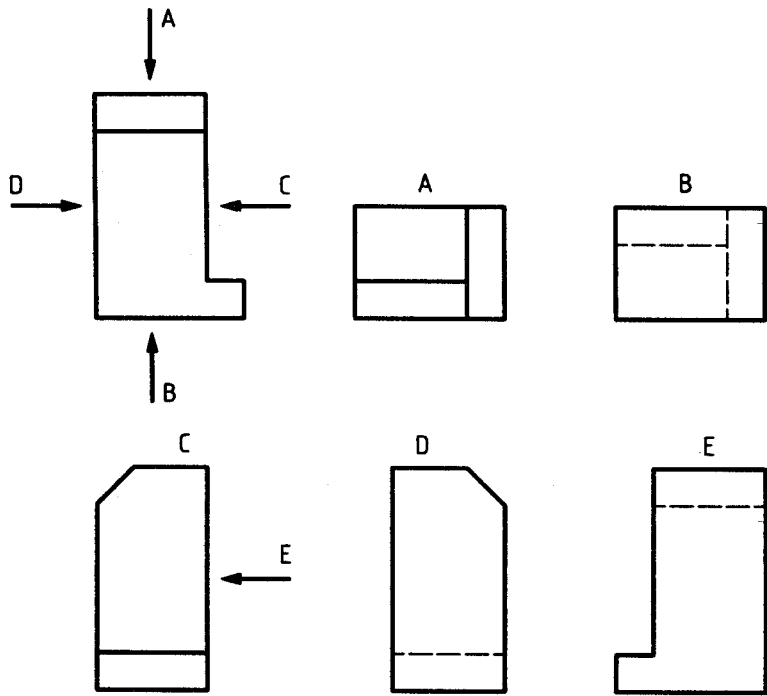


Figure 1 — Identification of referenced views

5 Choice of views

When views (including cuts and sections) are needed, these shall be selected according to the following principles:

- limit the number of views (and cuts and sections) to the minimum necessary but sufficient to fully delineate the object without ambiguity;
- avoid the need for hidden outlines and edges;
- avoid unnecessary repetition of a detail.

6 Partial views

6.1 General

Features needing specific illustration, but not meriting a full view, may be illustrated using a partial view limited by a continuous narrow line with zigzags of type 01.1.19 according to ISO 128-24:1999 (see Figure 2).

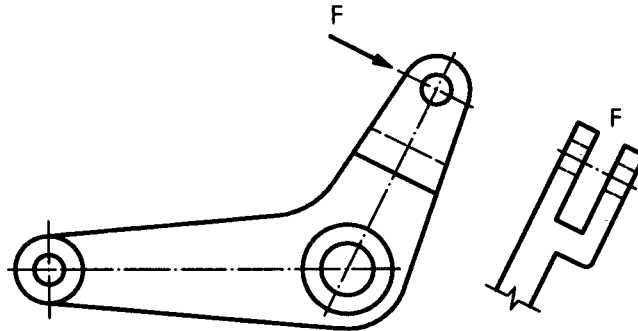


Figure 2 — Partial view

6.2 Partial view of symmetrical parts

To save time and space, symmetrical objects may be drawn as a fraction of the whole [see Figure 3 a), b) and c)].

The line of symmetry is identified at each of its ends by two narrow short parallel lines drawn at right angles to it [see Figure 3 a), b) and c)]. The graphical symbol for symmetry shall be drawn in accordance with clause C.4.

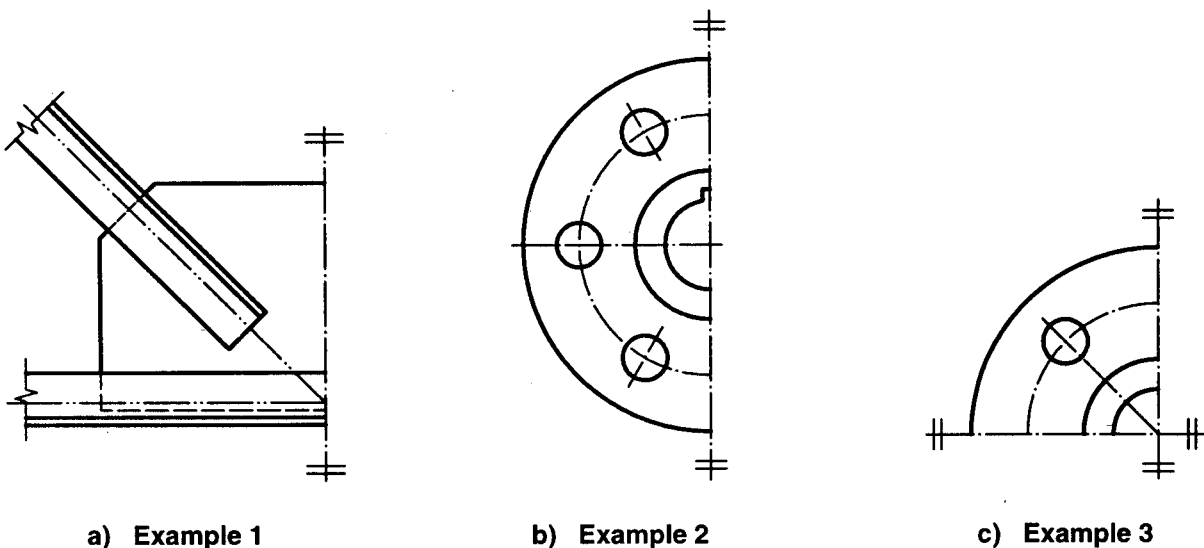


Figure 3 — Partial view of symmetrical parts

7 Special positions of view

When necessary, it is permitted to show the view in another position than that indicated by the reference arrow.

The fact that the view is shown in another position should be clarified by an arc arrow showing the direction of rotation according to Figure 4 a) and b). The angle of rotation of the view after the capital letter may be indicated. If used, the sequence shall be:

“view identification — arc arrow — angle of rotation”

The arc arrow shall be drawn in accordance with clause C.3.

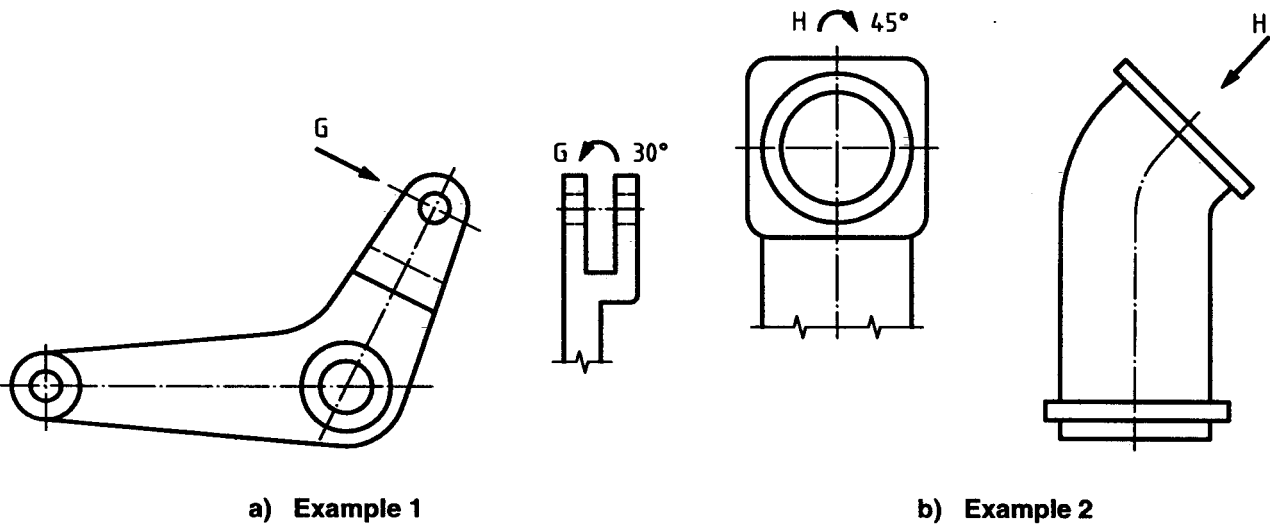


Figure 4 — Special view positions

Annex A (normative)

First angle projection method

A.1 General

The first angle projection method is to be regarded as a requirement of this part of ISO 128. A more detailed description of the first angle projection method is to be found in ISO 5456-2.

A.2 First angle projection method

With reference to the front view, (a), the other views are arranged as follows (see Figure A.1):

- the view from above, (b), is placed underneath;
- the view from below, (e), is placed above;
- the view from the left, (c), is placed on the right;
- the view from the right, (d), is placed on the left;
- the view from the rear, (f), may be placed on the left or right, as convenient.

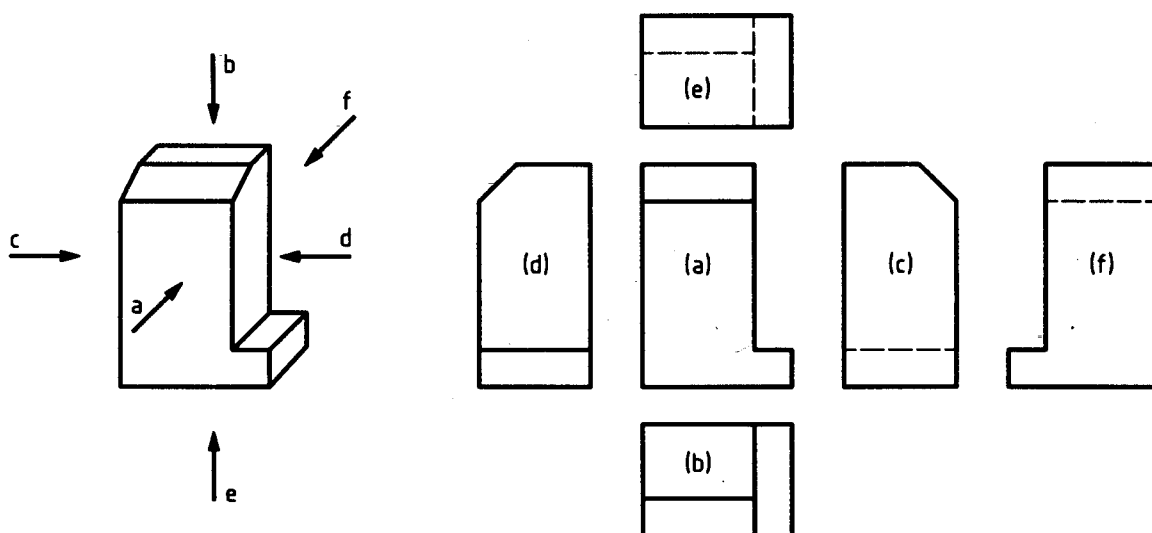


Figure A.1 — First angle projection method

A.3 Graphical symbol

The graphical symbol for the first angle projection method is shown in Figure A.2. The proportions and dimensions of this graphical symbol are specified in ISO 5456-2.

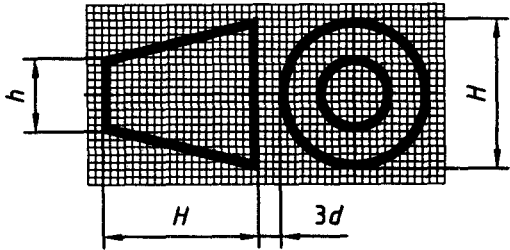


Figure A.2 — Graphical symbol

Annex B (normative)

Third angle projection method

B.1 General

The third angle projection method is to be regarded as a requirement of this part of ISO 128. A more detailed description of the third angle projection method is to be found in ISO 5456-2.

B.2 Third angle projection method

With reference to the front view, (a), the other views are arranged as follows (see Figure B.1):

- the view from above, (b), is placed above;
- the view from below, (e), is placed underneath;
- the view from the left, (c), is placed on the left;
- the view from the right, (d), is placed on the right;
- the view from the rear, (f), may be placed on the left or right, as convenient.

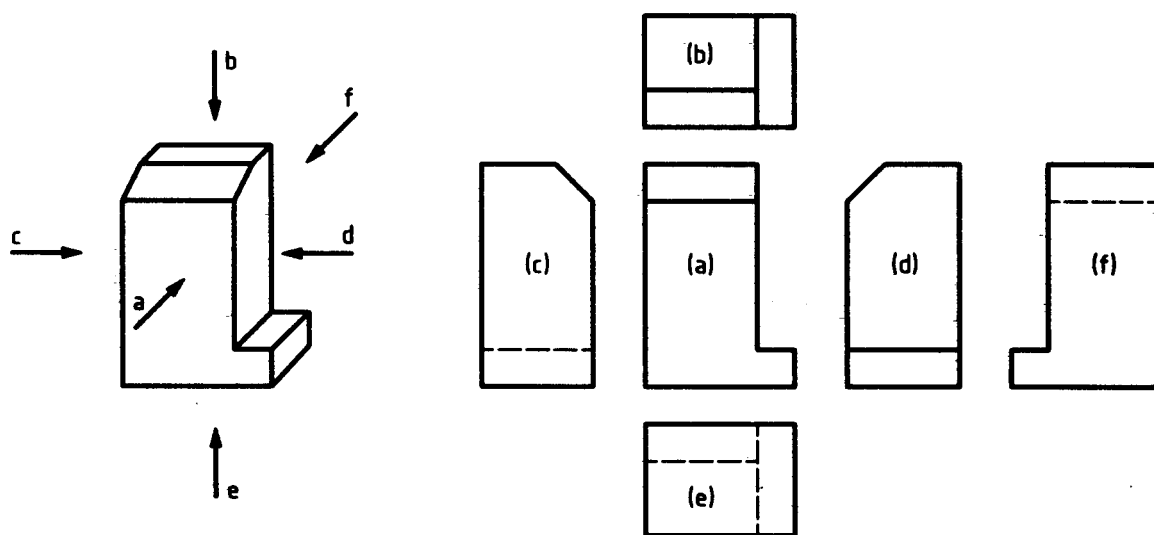


Figure B.1 — Third angle projection method

B.3 Graphical symbol

The graphical symbol for the third angle projection method is shown in Figure B.2. The proportions and dimensions of this graphical symbol are specified in ISO 5456-2.

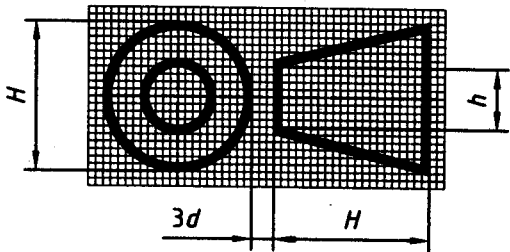


Figure B.2 — Graphical symbol

Annex C (normative)

Graphical symbols

C.1 General

In order to harmonize the sizes of the graphical symbols specified in this part of ISO 128 with those of the other inscriptions on the drawing (dimensions, tolerances, etc.), the rules given in ISO 81714-1 shall apply.

The view identification lettering height, h , shall be larger than the normal lettering on the technical drawing by a factor of $\sqrt{2}$.

Within Figures C.1, C.2 and C.3, lettering type B, vertical, according to ISO 3098-0, applies. Other lettering types are also permitted.

C.2 Reference arrow

See Figure C.1.

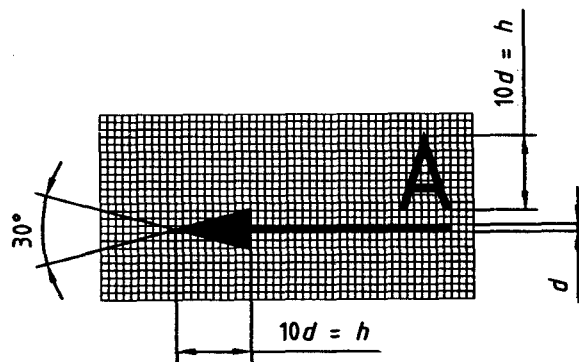


Figure C.1 — Graphical symbol for reference arrows

C.3 Arc arrow

See Figure C.2.

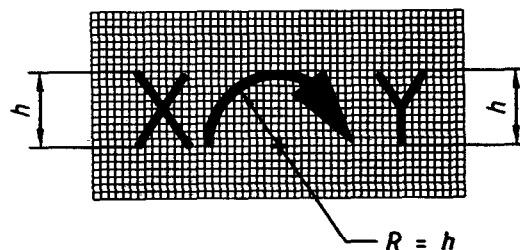


Figure C.2 — Graphical symbol for arc arrows

C.4 Symmetry

See Figure C.3.

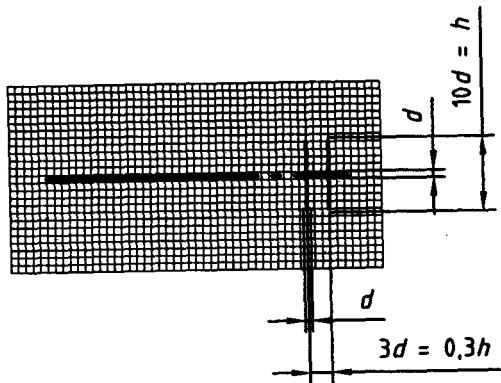


Figure C.3 — Graphical symbol for symmetry

Bibliography

- [1] ISO 128-20, *Technical drawings — General principles of presentation — Part 20: Basic conventions for lines.*

(Continued from second cover)

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 10209-1 : 1992 Technical product documentation — Vocabulary — Part 1 : Terms relating to technical drawings general and types of drawings	IS 8930 (Part 1) : 1995 Technical product documentation — Vocabulary: Part 1 Terms relating to technical drawings general and types of drawings	Identical
ISO 10209-2 : 1993 Technical product documentation — Vocabulary — Part 2 : Terms relating to projection methods	IS 8930 (Part 2) : 2001 Technical product documentation — Vocabulary: Part 2 Terms relating to projection methods	do

The technical committee responsible for the formulation of this standard has reviewed the provisions of the following International Standards to which references have been made in the text, and has decided that they are acceptable for use in conjunction with this standard:

<i>International Standard</i>	<i>Title</i>
ISO 128-24 : 1999	Technical drawings — General principles of presentation — Part 24 : Lines on mechanical engineering drawings
ISO 81714-1	Design of graphical symbols for use in the technical documentation of products — Part 1 : Basic rules

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This Indian Standard has been developed from Doc : PG 24/MGP 24 (0516).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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